Appendix E: Chemicals Nominated to the NTP in Fiscal Years 2004 to 2009 for In-Depth Toxicological Evaluation

This table contains information updated through December 2009. If NTP testing has been conducted, a link is provided to the results and status information. For additional information about the NTP studies listed, contact Central Data Management, Mail Drop K2-05, NIEHS, P.O. Box 12233, Research Triangle Park, NC 27709 (Phone: 919-541-3419; Fax: 919-541-3687; E-mail: CDM@niehs.nih.gov). Abstracts for all published NTP long-term carcinogenicity technical reports and short-term toxicity study reports are available electronically over the Internet. To view the abstracts, or for additional NTP information, visit http://ntp-server.niehs.nih.gov.

Chemical Name & CAS Number	Nomination Source & Year	Rationale for Request & • Recommended Action	Current NTP Status
Abscisic acid 14375-45-2	NCI 2004	A widely available plant hormone whose toxicological properties have not been thoroughly investigated • Genotoxicity testing	Selected http://ntp.niehs.nih.gov/go/ts-M040027
Acenaphthenequinone 82-86-0	Private individual 2005	• Initial toxicological characterization	In review/pending — see Polycyclic aromatic hydrocarbon quinones
Acesulfame potassium 55589-62-3	Private individual 2006	Widely used as a component of sweetener blends with Splenda and in artificially sweetened products such as "lite" fruit juices, fruit drinks, ice creams, flavored water and sports drinks Inadequate long-term animal testing Tests carried out to date do not give reasonable assurance that acesulfame potassium is "safe" • Two-year toxicity/carcinogenicity studies in rats and mice	In review/pending http://ntp.niehs.nih.gov/go/ts-M960069
Acetoin 513-86-0	United Food and Commercial Workers International Union 2006		Selected — see Artificial butter flavoring and constituents http://ntp.niehs.nih.gov/go/ts-M990018
Acetyl-L-carnitine/α-Lipoic acid supplements	NCI 2005	Consumer exposure through increasing dietary supplement use Lack of adequate toxicological data • Subchronic toxicity studies (individual and combination studies)	Deferred Acetyl-L-carnitine hydrochloride (5080-50-2) http://ntp.niehs.nih.gov/go/ts-M050013 DL-α-Lipoic acid (1077-28-7) http://ntp.niehs.nih.gov/go/TS-M980033 α-Lipoic acid (62-46-40) http://ntp.niehs.nih.gov/go/TS-M050014
Acetyl-L-carnitine hydrochloride 5080-50-2	NCI 2005		Deferred — see Acetyl-L-carnitine/α-Lipoic acid supplements http://ntp.niehs.nih.gov/go/ts-M050013
Alkylanilines	NIEHS 2008	Potential for human exposure from a variety of industrial and ambient sources Suspicion of toxicity based on chemical structure Insufficient data to characterize toxicity of this subclass • Initial toxicological characterization	Selected 2-Ethylaniline (578-54-1) http://ntp.niehs.nih.gov/go/TS-08029 3-Ethylaniline (587-02-0) http://ntp.niehs.nih.gov/go/TS-08030 3,5-Xylidine (108-69-0) http://ntp.niehs.nih.gov/go/TS-11430-P
Aminopyridines	NCI 2006	Animal and human studies have shown that the aminopyridines are acutely toxic compounds, partly due to its ability to block K+ channels, causing convulsions, seizures, among other effects • Toxicological characterization including chronic toxicity and carcinogenicity studies • Short-term mechanistic studies • Comparative neurotoxicity studies	Selected 2-Aminopyridine (504-29-0) http://ntp.niehs.nih.gov/go/TS-M20139 3-Aminopyridine (462-08-8) http://ntp.niehs.nih.gov/go/TS-M060052 4-Aminopyridine (504-24-5) http://ntp.niehs.nih.gov/go/TS-M060053
3-Aminopyridine 462-08-8	NCI 2006		Selected — see Aminopyridines http://ntp.niehs.nih.gov/go/ts-M060052
2-Aminopyridine 504-29-0	NCI 2006		Selected — see Aminopyridines http://ntp.niehs.nih.gov/go/ts-M20139
4-Aminopyridine 504-24-5	NCI 2006		Selected — see Aminopyridines http://ntp.niehs.nih.gov/go/ts-M060053
Ammonium metavanadate 7803-55-6	NIEHS/NTP; EPA 2007		Selected — see Tetravalent and pentavalent vanadium compounds

Chemical Name & CAS Number	Nomination Source & Year	Rationale for Request & • Recommended Action	Current NTP Status
Anthraquinone 84-65-1	Chemical Products Corporation 2009	• Carcinogenicity • Test currently available form of anthraquinone	In review/pending http://ntp.niehs.nih.gov/go/ts-84651 Previously tested — see NTP TR-494
Antimony trioxide 1309-64-4	NIEHS 2005	Significant human exposure in occupational settings Lack of adequate two-year exposure carcinogenicity studies • Carcinogenicity, toxicity, cardiotoxicity	Selected http://ntp.niehs.nih.gov/go/ts-10676-V
Antimony trioxide 1309-64-4	CPSC 2005		Selected — see Flame retardants http://ntp.niehs.nih.gov/go/ts-10676-V
Arbutin 497-76-7	NIEHS 2004	Consumer exposure through food, cosmetics and dietary supplements Lack of adequate toxicological data Suspicion of toxicity based on chemical structure • *In vitro* and *in vivo* metabolism/disposition • *In vitro* and *in vivo* genetic toxicity	Selected http://ntp.niehs.nih.gov/go/ts-M040101
Artemisinin and derivatives	NIEHS 2004	Increased use as medicinal and dietary supplement to treat malaria and prevent cancer • Toxicological characterization	No testing
Artemisinin 63968-64-9	NIEHS 2004		See Artemisinin and derivatives
Artificial butter flavoring and constituents	United Food and Commercial Workers International Union 2007	Several outbreaks of fatal lung disease have been documented among workers exposed to the vapors of butter flavoring in the manufacture of popcorn, the most prominent chemical exposures being from diacetyl and acetonin The potency and severity of diacetyl has been demonstrated by short-term laboratory tests conducted by NIOSH • Toxicity, carcinogenicity by inhalation • Mechanistic studies	Selected Acetoin (513-86-0) http://ntp.niehs.nih.gov/go/TS-M990018 2,3-Butanedione (431-03-8) http://ntp.niehs.nih.gov/go/TS-M940009
Autumn Sunset True Color Concentrate	FDA 2005		Selected — see Permanent makeup inks http://ntp.niehs.nih.gov/go/TS-M070050
Bentonite 1302-78-9	Private individual 2005	Bentonite clay is being advertised as a healing substance that helps remove toxins from the body; ads suggest that it can be used externally as a clay poultice, mudpack or in the bath • Dermal toxicity	In review/pending
7,12-Benzanthraquinone 2498-66-0	Private individual 2005		In review/pending — see Polycyclic aromatic hydrocarbon quinones
Benzoic acid 65-85-0	Private individual 2005		No testing — see Sodium benzoate and benzoic acid in Foray 48B insecticide http://ntp.niehs.nih.gov/go/ts-65850
2,6-Dichloro-1,4-benzoquinone 697-91-6	Private individual 2009		In review/pending — see DBPs — New and Emerging Chemical Classes
Trifluoromethylbenzene (Benzotrifluoride) 98-08-8	NCI 2006	High production volume and increased use Potential worker exposures Lack of adequate toxicological data Demonstrated toxicity in short-term studies	Deferred http://ntp.niehs.nih.gov/go/ts-98088
Bisphenol A 80-05-7	Private individual 2006	There is widespread exposure to low doses of bisphenol A Additional studies on the low-dose reproductive effects of bisphenol A are needed • Developmental reproductive effects	Selected http://ntp.niehs.nih.gov/go/ts-10034-Y
Bisphenol AF 1478-61-1	NIEHS 2008	Moderate production and use in polymer synthesis Short-term studies suggest potential for endocrine disruption and adverse reproductive effects Similarity in structure and endocrine effects to bisphenol A Moderate production and use in polymer synthesis • Comprehensive toxicological characterization	Selected http://ntp.niehs.nih.gov/go/TS-08002
Bitter orange N/A	Private individual 2004		Selected — see Creatine, Bitter orange and Saw palmetto http://ntp.niehs.nih.gov/go/ts-M040019

Chemical Name & CAS Number	Nomination Source & Year	Rationale for Request & • Recommended Action	Current NTP Status
Brominated phenols	NIEHS 2004	Lack of chronic toxicity and carcinogenicity data for brominated phenols • Toxicological characterization	In review/pending 2-Bromophenol (95-56-7) 3-Bromophenol (591-20-8) 4-Bromophenol (106-41-2) 2,4-Dibromophenol (615-58-7) 2,6-Dibromophenol (608-33-3) 3,5-Dibromophenol (626-41-5) Pentabromophenol (608-71-9) http://ntp.niehs.nih.gov/go/TS-11300-K 2,3,4,6-Tetrabromophenol (14400-94-3)
4-Bromofluorobenzene 460-00-4	NIEHS 2004	High production volume and use Lack of adequate toxicological data Suspicion of toxicity based on chemical structure • Toxicological testing	Deferred
2-Bromophenol 95-56-7	NIEHS 2004		In review/pending — see Brominated phenols
3-Bromophenol 591-20-8	NIEHS 2004		In review/pending — see Brominated phenols
4-Bromophenol 106-41-2	NIEHS 2004		In review/pending —Å see Brominated phenols
2,3-Butanedione 431-03-8	United Food and Commercial Workers International Union 2006		Selected — see Artificial butter flavoring and constituents http://ntp.niehs.nih.gov/go/ts-M940009
Butterbur 90082-63-6	NIEHS 2009	Use as a dietary supplement and lack of toxicological data Suspicion of toxicity based on pharmacological activity of constituents Potential presence of hepatotoxic pyrrolizidine alkaloids • Comprehensive toxicological characterization	Selected
tert-Butylacrylamide 107-58-4	NCI 2006	High production volume Potential worker and consumer exposures Lack of adequate toxicological data Suspicion of toxicity based on chemical structure (1,6,7) • 90-day toxicity, chemical disposition/ metabolism, genotoxicity studies	Selected http://ntp.niehs.nih.gov/go/ts-M060004
Butylated hydroxyanisole (BHA) 25013-16-5	Private individual 2005	Widely used preservative in pet foods Dogs were sickened when fed pet food in which BHA was over formulated or unevenly mixed Since previous toxicity studies were performed using beagles, the nominator would like non-lethal studies in young, light-colored coat dogs that appear to be particularly sensitive to the toxic effects from BHA • Metabolism/excretion, hepatic studies in dogs (not beagles)	In review/pending http://ntp.niehs.nih.gov/go/ts-M88172
Butyl benzyl phthalate 85-68-7	Center for the Evaluation of Risks to Human Reproduction 2006		In review/pending — see Mixture of anti-androgenic phthalates http://ntp.niehs.nih.gov/go/ts-10422-E
3-Butylidenephthalide 551-08-6	Private individual 2008		Selected — see Dong quai (*Angelica sinensis* root (308068-61-3) and extract (299184-76-2))
tert-Butylphenyl diphenyl phosphate 56803-37-3	CPSC 2005		Selected — see Flame retardants http://ntp.niehs.nih.gov/go/ts-10978-T
n-Butyl-*p*-hydroxybenzoate (Butylparaben) 94-26-8	NIEHS 2004	Widespread use in foods, cosmetics, and pharmaceuticals Potential reproductive toxicant Lack of adequate toxicological data • Toxicological characterization including reproductive toxicity studies	Selected http://ntp.niehs.nih.gov/go/ts-M88007

Chemical Name & CAS Number	Nomination Source & Year	Rationale for Request & • Recommended Action	Current NTP Status
Celebrex and Bextra	Private individual 2005	Vioxx, a popular drug used to treat arthritis, was removed from the market when it was discovered that it increased the risk of heart attack and stroke; two other COX-2 inhibitors, Celebrex and Bextra, should be studied to determine if they have similar side effects • Toxicity, including cardiotoxicity	In review/pending Celecoxib (Celebrex) (169590-42-5) Valdecoxib (Bextra) (181695-72-7)
Celecoxib (Celebrex) 169590-42-5	Private individual 2005		In review/pending — see Celebrex and Bextra
Ceric oxide 1306-38-3	NIEHS 2004	Widespread industrial use and potential for increasing exposure Demonstrated pulmonary toxicity Lack of toxicity data for nanoscale form • Toxicological characterization with chemical disposition/toxicokinetics and nanoscale studies	Deferred
2-Chloropropenal 683-51-2	Private individual 2009		In review/pending — see DBPs — New and Emerging Chemical Classes
p-Chlorobenzotrifluoride 98-56-6	Kowa American Corp. 2006	High production volume No workplace exposure standards Increasing industrial and potential consumer use as a VOC-exempt solvent Lack of chronic toxicity data • Toxicological characterization	Selected http://ntp.niehs.nih.gov/go/ts-10472-T
Corrosion inhibitors mixture	Private individual 2005	Lack of data related to the health effects caused by the exposure to corrosion inhibitor mixtures Most of the chemicals have been studied in isolation, and not as mixtures found in commercial products • Toxicity testing	In review/pending
Creatine, Bitter orange, and Saw palmetto	Private individual 2004	Consumer exposure through increasing dietary supplement use Suspicion of toxicity Lack of adequate toxicity data • Long-term studies	Bitter orange http://ntp.niehs.nih.gov/go/ts-M040019 Creatine monohydrate (6020-87-7) Saw palmetto extract (84604-15-9)
Creatine monohydrate 6020-87-7	Private individual 2004		In review/pending — see Creatine, Bitter orange and Saw palmetto
Crystalline silica 14808-60-7	Private individual 2009		In review/pending — see Silica, crystalline — quartz http://ntp.niehs.nih.gov/go/ts-M920041
Drinking water disinfection by-products (DBPs) New and Emerging Chemical Classes	Private individual 2009	Concern is primarily for carcinogenic potential • Toxicological characterization	In review/pending 2,6-Dichloro-1,4-benzoquinone (697-91-6) 2-Chloropropenal (683-51-2) Dichloroacetaldehyde (79-02-7) *N,N*-Dichlorohistamine (109241-52-3) 1,1-Dichloropropanone (513-88-2) 2,3-Dichloropropenenitrile (2601-89-0) 2,2-Dichloropropionitrile (594-40-1) *N*-Nitroso-3-methylindole (58567-91-2) 1,1,1-Trichloropropanone (918-00-3)
Decabromodiphenyl oxide 1163-19-5	CPSC 2005		Selected — see Flame retardants http://ntp.niehs.nih.gov/go/ts-10672-E
2,6-Diaminopyridine 141-86-6	NCI 2005	Moderate production and industrial use Lack of adequate toxicological data • *In vitro* mammalian genotoxicity studies, dermal absorption studies	Selected http://ntp.niehs.nih.gov/go/ts-M050015
2,4-Dibromophenol 615-58-7	NIEHS 2004		In review/pending — see Brominated phenols
2,6-Dibromophenol 608-33-3	NIEHS 2004		In review/pending — see Brominated phenols
3,5-Dibromophenol 626-41-5	NIEHS 2004		In review/pending — see Brominated phenols

Chemical Name & CAS Number	Nomination Source & Year	Rationale for Request & • Recommended Action	Current NTP Status
Dibutyl phthalate 84-74-2	Center for the Evaluation of Risks to Human Reproduction 2006		Selected — see Mixture of anti-androgenic phthalates http://ntp.niehs.nih.gov/go/ts-10987-X
Dichloroacetaldehyde 79-02-7	Private individual 2009		In review/pending — see DBPs — New and Emerging Chemical Classes
N,N-Dichlorohistamine 109241-52-3	Private individual 2009		In review/pending — see DBPs — New and Emerging Chemical Classes
2,4-Dichlorophenoxyacetic acid (2,4-D) 94-75-7	Private individual 2005	Concern about health-related effects of 2,4-D exposure from the use of lawn care products	In review/pending http://ntp.niehs.nih.gov/go/ts-10451-Y
1,3-Dichloro-2-propanol 96-23-1	NIEHS 2004	High production volume and use Occurrence in foods Reproductive toxicity and carcinogenicity demonstrated but not adequately characterized • Toxicological characterization, metabolism and disposition • Reproductive toxicity • Carcinogenicity	Selected http://ntp.niehs.nih.gov/go/ts-11538-C
1,1-Dichloropropanone 513-88-2	Private individual 2009		In review/pending — see DBPs — New and Emerging Chemical Classes
2,3-Dichloropropenenitrile 2601-89-0	Private individual 2009		In review/pending — see DBPs — New and Emerging Chemical Classes
2,2-Dichloropropionitrile 594-40-1	Private individual 2009		In review/pending — see DBPs — New and Emerging Chemical Classes
Di(2-ethylhexyl)phthalate (DEHP) 117-81-7	FDA 2004	Long-term risks associated with medical exposures of infants to DEHP have not been clearly elucidated Significant knowledge gaps on the toxicokinetics and effects in fetal and neonatal primates of intravenous DEHP exposure Further studies will better define risks and benefits of utilizing non-DEHP-containing products • Toxicokinetics, biotransformation, reproductive toxicity, developmental toxicity, immunotoxicity	In review/pending http://ntp.niehs.nih.gov/go/ts-10188-J
Di(2-ethylhexyl) phthalate 117-81-7	Center for the Evaluation of Risks to Human Reproduction 2006		Selected — see Mixture of anti-androgenic phthalates http://ntp.niehs.nih.gov/go/ts-10188-J
Diethyl phthalate 84-66-2	NIEHS 2005	Widespread consumer exposure Tests in experimental animals reveal endocrine-disrupting properties related to reproductive development • Reproductive toxicity • Multi-generation oral reproductive and developmental toxicity studies • Toxicokinetic studies (oral and dermal routes)	No Testing http://ntp.niehs.nih.gov/go/ts-10112-F
1-(Dimethylamino)-2-propanol (Dimepranol) 108-16-7	NCI 2004	Suspected of causing ocular toxicity • Genotoxicity	Selected http://ntp.niehs.nih.gov/go/ts-M040028
1,2-Dimethoxy-4-(3-fluoro-2-propenyl)benzene 161436-20-0	USDA 2008	A fluorine analog of methyl eugenol, 1,2-dimethoxy-4-(3-fluoro-2-propenyl)benzene in short field tests was as an effective attractant as methyl eugenol The incorporation of a fluorine atom in the methyl eugenol molecule profoundly slowed the metabolism in the oriental fruit fly, and had lower toxicity and lower recombinagenicity in the yeast deletion assay than methyl eugenol • Test for potential toxicity/carcinogenicity	In review/pending
Dimethylamine borane 74-94-2	NIOSH 2007	Possible contact sensitizer but insufficient evidence as determined by NIOSH Dermal Subject Matter Expert Workgroup • Dermal absorption • Skin sensitization (LLNA) • Initial toxicological characterization	Selected http://ntp.niehs.nih.gov/go/ts-M070051

Chemical Name & CAS Number	Nomination Source & Year	Rationale for Request & • Recommended Action	Current NTP Status
3-Dimethylaminopropylamine 109-55-7	NCI 2005	Significant and increasing use in personal care products Widespread industrial use Lack of information on chronic toxicity Evidence of toxicity in exposed workers • Genetic toxicology, chemical disposition	Selected http://ntp.niehs.nih.gov/go/ts-11295-W
Dimorpholinodiethyl ether 6425-39-4	NCI 2006	Used in the manufacture of certain foams and adhesives Exposure through vapors and odors May help to form carcinogen nitrosmorpholine No information on toxicity of chemical found in available literature Concern that this compound could react with nitrites such as those present in the mouth to form a potent carcinogen, nitrosmorpholine • Limited testing, specialized tests, carcinogenicity	Selected http://ntp.niehs.nih.gov/go/ts-M060065
2′,2′-Dithiobisbenzanilide 135-57-9	NCI 2006	Current literature on toxicological effects is inadequate Acute studies reporting irritation and sensitization data exist, but no subchronic, chronic, or genotoxicity tests were found Toxic to aquatic organisms and its release from industrial waste streams may be hazardous to the environment • Toxicity/carcinogenicity • Genotoxicity studies • Metabolism studies	Selected http://ntp.niehs.nih.gov/go/ts-M060048
Dong quai (*Angelica sinensis* root [308068-61-3] and extract (299184-76-2])	Private individual 2008	Widespread use as a dietary supplement Suspicion of toxicity based on estrogenic activity and chemical structure Lack of adequate toxicity data • Comprehensive toxicological characterization	Selected 3-Butylidenephthalide (551-08-6) Dong quai (*Angelica sinensis* root [308068-61-3]) and extract (299184-76-2) Ferulic acid (1135-24-6) Ligustilide (4431-01-0)
Dong quai *Angelica sinensis* root 308068-61-3	Private individual 2008		Selected — see Dong quai (*Angelica sinensis* root [308068-61-3] and extract (299184-76-2)
Dong quai *Angelica sinensis* root extract 299184-76-2	Private individual 2008		Selected — see Dong quai (*Angelica sinensis* root [308068-61-3] and extract (299184-76-2)
Double Fudge Concentrate	FDA 2005		Selected — see Permanent makeup inks http://ntp.niehs.nih.gov/go/ts-M070049
Double Dark Fudge True Color Concentrate	FDA 2005		Selected — see Permanent makeup inks http://ntp.niehs.nih.gov/go/ts-M070048
Dulcoside A 64432-06-0	Private individual 2009		In review/pending — see Stevia and components
Environment/copy-machine emissions and breast cancer	Private individual 2004	Requested NTP to investigate whether inhaling copy-machine fumes is a risk factor for developing breast cancer	In review/pending
2-Ethylaniline 578-54-1	NIEHS 2008		Selected — see Alkylanilines (2-Ethylaniline [578-54-1], 3-Ethylaniline [587-02-0], 3,5-Dimethylaniline [108-69-0])
3-Ethylaniline 587-02-0	NIEHS 2008		Selected — see Alkylanilines (2-Ethylaniline [578-54-1], 3-Ethylaniline [587-02-0], 3,5-Dimethylaniline [108-69-0])
Ethylene glycol 2-ethylhexyl ether 1559-35-9	NIEHS 2008	High production volume Potential worker exposures Suspicion of toxicity based on chemical structure Lack of adequate toxicity data • Reproductive toxicity studies	Selected
2-Ethylhexyl diphenyl phosphate 1241-94-7	CPSC 2005		Selected — see Flame retardants http://ntp.niehs.nih.gov/go/ts-10674-L
2-Ethylhexyl *p*-methoxycinnamate 5466-77-3	NCI 2006	High production volume Widespread consumer exposure as a common sunscreen active ingredient Reported estrogenic and reproductive effects • Comprehensive toxicological characterization including carcinogenicity studies	Selected http://ntp.niehs.nih.gov/go/ts-M20239

Chemical Name & CAS Number	Nomination Source & Year	Rationale for Request & • Recommended Action	Current NTP Status
Evening primrose oil 90028-66-3	NIEHS 2009	Use as a dietary supplement, particularly for autoimmune conditions Lack of adequate toxicological data • Initial toxicological characterization • Immunotoxicity studies	Selected
Ferulic acid 1135-24-6	Private individual 2008		Selected — see Dong quai (*Angelica sinensis* root [308068-61-3] and extract (299184-76-2)
Flame retardants	CPSC 2006	Anticipated increased use in upholstered furniture and bedding and potential consumer exposures from these uses Insufficient toxicity data to assess potential health risks	Selected Antimony trioxide (1309-64-4) http://ntp.niehs.nih.gov/go/TS-10676-V *tert*-Butylphenyl diphenyl phosphate (56803-37-3) http://ntp.niehs.nih.gov/go/TS-10978-T Decabromodiphenyl oxide (1163-19-5) http://ntp.niehs.nih.gov/go/TS-10672-E 2-Ethylhexyl diphenyl phosphate (1241-94-7) http://ntp.niehs.nih.gov/go/TS-10674-L Isodecyl diphenyl phosphate (29761-21-5) http://ntp.niehs.nih.gov/go/TS-M20299 Phenol, isopropylated, phosphate (68937-41-7) http://ntp.niehs.nih.gov/go/TS-M060012 Phosphonic acid, (3-((hydroxymethyl)amino)-3-oxopropyl)-, dimethyl ester (20120-33-6) http://ntp.niehs.nih.gov/go/TS-M060010 Tricresyl phosphate (1330-78-5) http://ntp.niehs.nih.gov/go/TS-10277-D Tris(hydroxymethyl)phosphine oxide (1067-12-5) http://ntp.niehs.nih.gov/go/TS-M060011 Tris(chloropropyl)phosphate (13674-84-5) http://ntp.niehs.nih.gov/go/TS-M20263
Garcinia cambogia extract 90045-23-1	NCI 2005	Consumer exposure through increasing dietary supplement use Lack of adequate toxicological data • Genetic toxicology • Subchronic toxicity	Selected http://ntp.niehs.nih.gov/go/ts-M050016
Gum guggul and some of its steroidal constituents	NIEHS 2003	Consumer exposure through increasing dietary supplement use Demonstrated metabolic and hormonal effects Lack of adequate toxicological data • Toxicological characterization	Selected Guggulsterone (95975-55-6) E-Guggulsterone (39025-24-6) Z-Guggulsterone (39025-23-5) Gum guggul extract http://ntp.niehs.nih.gov/go/TS-M050066
Guggulsterone 95975-55-6	NIEHS 2003		Selected — see Gum guggul and some of its steroidal constituents
E-Guggulsterone 39025-24-6	NIEHS 2003		Selected — see Gum guggul and some of Its steroidal constituents
Z-Guggulsterone 39025-23-5	NIEHS 2003		Selected — see Gum guggul and some of its steroidal constituents
Gum guggul extract	NIEHS 2003		Selected — see Gum guggul and some of its steroidal constituents
Gypsum, natural and synthetic forms	Mount Sinai Irving J. Selikoff Center for Occupational and Environmental Medicine; Operative Plasterers' and Cement Masons' International Association of the United States and Canada 2005	Widespread worker exposures in numerous occupations and to the general population after destruction of the World Trade Centers in 2001 Very limited toxicity data to assess potential health risks • Long-term toxicity studies	Deferred — additional studies are of low priority Gypsum (3397-24-5)

Chemical Name & CAS Number	Nomination Source & Year	Rationale for Request & • Recommended Action	Current NTP Status
Gypsum 13397-24-5	Mount Sinai Irving J. Selikoff Center for Occupational and Environmental Medicine; Operative Plasterers' and Cement Masons' International Association of the United States and Canada 2005		Deferred — see Gypsum, natural and synthetic forms
Hydroquinone 123-31-9	FDA 2009	Use in drugs and cosmetics Evidence of carcinogenicity from oral exposures in prior NTP studies Insufficient toxicological data for regulatory hazard determination • Dermal carcinogenicity studies • Reproductive toxicity studies	Selected http://ntp.niehs.nih.gov/go/ts-10022-H
Hydroxyurea 127-07-1	Private individual 2006	• Carcinogenicity studies	In review/pending http://ntp.niehs.nih.gov/go/ts-10871-K
Imidazolidinyl urea 39236-46-9	NCI 2005	Widely used preservative in personal care products Mutagenic potential Lack of adequate carcinogenicity data • Genetic toxicology • Chemical disposition via dermal absorption	Selected http://ntp.niehs.nih.gov/go/ts-M050017
Indium tin oxide 50926-11-9	NIEHS 2008	Moderate production volume Potential worker exposures Suspicion of toxicity based on chemical structure Lack of adequate toxicity data • Comprehensive toxicological characterization	Selected http://ntp.niehs.nih.gov/go/ts-M882472
Isodecyl diphenyl phosphate 29761-21-5	CPSC 2006		Selected — see Flame retardants http://ntp.niehs.nih.gov/go/ts-M20299
Libby amphibole, related atypical asbestos, and mineral fibers	EPA 2007	Limited data available on the adverse health effects of libby amphibole and other mineral fibers that may be present in commercial products such as insulation used in home construction, deposits mined for ores or used to produce gravel and fill • Toxicity, carcinogenicity • Mineral characterization • *In vitro* durability and toxicity studies • Subchronic and chronic toxicity/carcinogenicity studies via inhalation	Selected http://ntp.niehs.nih.gov/go/TS-M940105
Ligustilide 4431-01-0	Private individual 2008		Selected — see Dong quai (*Angelica sinensis* root [308068-61-3] and extract (299184-76-2)
α-Lipoic acid 62-46-4	NCI 2005		Deferred — see Acetyl-L-carnitine/α-Lipoic acid supplements http://ntp.niehs.nih.gov/go/ts-M050014
2-Methoxy-4-nitroaniline 97-52-9	NCI 2006	Used in dyeing textiles, as a dye in the printing industry, and as an intermediate in the synthesis of azo dyes in tattoo inks, emulsion paints and toy enamels Given the concerns about other anisidines, findings that this agent is mutagenic when metabolically activated raises concerns about the carcinogenic potential of this compound • Chronic toxicity, developmental, reproductive • Toxicological characterization including chronic toxicity and carcinogenicity studies	Selected http://ntp.niehs.nih.gov/go/ts-M060049
L-β-Methylaminoalanine 15920-93-1	NIEHS 2008	Widespread environmental occurrence as a marine natural product Suspected risk factor for neurological disease(s) Lack of adequate toxicity data • Comprehensive toxicological characterization	Selected http://ntp.niehs.nih.gov/go/ts-08035

Chemical Name & CAS Number	Nomination Source & Year	Rationale for Request & • Recommended Action	Current NTP Status
Methyl iodide (Iodomethane) 74-88-4	Natural Resources Defense Council 2006	EPA is proposing to register iodomethane as replacement for methyl bromide (MB), as a pre-plant soil fumigant for peppers, strawberries and tomatoes The National Resources Defense Council believes that the safety of Iodomethane cannot be fully evaluated because of gaps in the existing database The EPA evaluation of cancer risks for Methyl iodide (MI) relied on an unpublished 24 month inhalation chronic toxicity/ carcinogenicity study in rats, completed in 2005, in which over half the animals in the control and treatment groups died before the termination of the study IARC reviewed both MI and MB in 1986 and again in 1999, both times finding inadequate data to make a determination of cancer risk in humans • Carcinogenicity	In review/pending
N-Methyl-3-oxobutanamide 20306-75-6	NCI 2006	High production volume Potential worker and environmental exposures Lack of adequate toxicological data • *In vitro* and *in vivo* genotoxicity studies	Selected http://ntp.niehs.nih.gov/go/ts-M060006
Mixture of anti-androgenic phthalates	Center for the Evaluation of Risks to Human Reproduction (CERHR) 2006	Many toxicologically active phthalates appear to have a common mechanism of action Concurrent exposure of the general population to multiple phthalates may pose a greater health risk than expected based on risk estimates derived from toxicology studies on individual phthalates While the literature is rich with publications on DEHP, DBP, BBP, and other phthalates, there is clearly insufficient literature on studies involving mixtures of phthalates to support a CERHR expert panel evaluation • Reproductive toxicity • Mechanistic studies	Selected Butyl benzyl phthalate (85-68-7) http://ntp.niehs.nih.gov/go/TS-10422-E Dibutyl phthalate (84-74-2) http://ntp.niehs.nih.gov/go/TS-10987-X Di(2-ethylhexyl) phthalate (117-81-7) http://ntp.niehs.nih.gov/go/TS-10188-J
Mixtures of phthalates and other endocrine disrupting compounds (EDCs)	Private individual 2009	Humans are exposed to mixtures of these chemicals, and regulatory agencies are uncertain about methods for assessing the effects of exposure to mixtures during development These chemicals are now known interact in a dose-additive manner *in utero*, but less is known about the effects of these mixtures at lower dosage levels using robust sample sizes In addition, the end points examined to date have been limited to male reproductive toxicity, and it is now apparent that these chemicals also affect pregnancy, the female offspring and male puberty; other potential effects, such as like obesity or diabetes, also have not been studied for mixtures • Postnatal toxicological assessment following developmental exposure	In review/pending
Nanoscale materials: nanoscale gold and nanoscale silver	FDA 2007	Increasing widespread use in drug, food and cosmetic products General lack of data on the toxicology and pharmacokinetics of these materials • Nanoscale materials characterization • Metabolism and pharmacokinetic studies • Acute, subacute and subchronic toxicity studies • Examine the role of size and surface coating on the fate (ADME) and toxicity of nanoscale material in a rodent animal model	Selected Nanoscale gold (7440-57-5) Nanoscale silver (7440-22-4[http://ntp.niehs.nih.gov/go/TS-M070067
Nanoscale gold 7440-57-5	FDA 2008		Selected — see Nanoscale materials: nanoscale gold and nanoscale silver http://ntp.niehs.nih.gov/go/ts-M070067
Nanoscale silver 7440-22-4	FDA 2008		Selected — see Nanoscale materials: nanoscale gold and nanoscale silver http://ntp.niehs.nih.gov/go/ts-M070067
5,12-Naphthacenequinone 1090-13-7	Private individual 2005		In review/pending — see Polycyclic aromatic hydrocarbon quinones

Chemical Name & CAS Number	Nomination Source & Year	Rationale for Request & • Recommended Action	Current NTP Status
1,2-Naphthoquinone 524-42-	Private individual 2005		In review/pending — see Phenanthraquinone (9,10-Phenanthrenequinone) and Polycyclic aromatic hydrocarbon quinones
1,4-Naphthoquinone 130-15-4	Private individual 2005		In review/pending — see Phenanthraquinone (9,10-Phenanthrenequinone) and Polycyclic aromatic hydrocarbon quinones
Naturally occurring asbestos	ATSDR/NCEH 2006	Widespread community exposure in certain geographic locales Insufficient dose-response data to characterize risk from exposure to "unregulated" asbestiform mineral fibers and naturally occurring fibrous mineral "mixtures" • Mineral characterization • *In vitro* durability and toxicity studies • Subchronic and chronic toxicity/carcinogenicity studies via inhalation	Selected http://ntp.niehs.nih.gov/go/TS-M940105
N-nitroso-3-methylindole 58567-91-2	Private individual 2009		In review/pending — see DBPs — New and Emerging Chemical Classes
Pentabromophenol 608-71-9	NIEHS 2004		In review/pending — see Brominated phenols http://ntp.niehs.nih.gov/go/ts-11300-K
Pentaethylenehexamine 4067-16-7	NCI 2006	Has been described as irritating, sensitizing, and corrosive in short-term tests in animals No information on the subchronic or chronic effects of exposure in humans or animals • Developmental, reproductive, short-term *in vitro* tests	No testing at this time because of the irritant and corrosive nature of this compound. http://ntp.niehs.nih.gov/go/ts-M20230
Pentafluoroiodoethane 354-64-3	NCI 2005	Being considered for many uses, including foam blowing agents, refrigeration, solvent cleaning, and aerosol propulsion These uses could lead to widespread release into the environment and to the release of iodine No subchronic or chronic testing information was found in the available literature Genotoxicity testing could help determine if additional testing is warranted • Genotoxicity	Selected http://ntp.niehs.nih.gov/go/ts-M050089
2,3-Pentanedione 600-14-6	NIEHS 2009	A diketone used as a flavoring agent in diverse food products; one of the few chemicals that imparts butter flavoring Similar diketones used in butter flavoring include diacetyl and acetoin Diacetyl has been implicated as the etiological agent in popcorn lung, a condition first observed in microwaveable popcorn factory workers; occupational exposure to diacetyl occurs by inhalation Popcorn lung is characterized by fibrotic lesions in the airways Fibrotic lesions in the airways result in a respiratory disorder called obliterative bronchiolitis Diacetyl may be removed from the butter flavoring mix used in the microwavable popcorn industry; potential flavoring substitutes include acetoin, a diacetyl trimer and 2,3-pentanedione • 14-Day acute inhalation study in rodents is proposed for initial dose range finding • After the completion of the acute study, a 90-day subchronic study is proposed with the option of conducting a chronic study pending the results of the subchronic studies	Selected http://ntp.niehs.nih.gov/go/TS-08010
Permanent makeup inks	FDA 2005	Rapidly growing practice in the United States Lack of adequate toxicological data Numerous human adverse event reports • *In vivo* allergenicity and photoallergenicity and *in vitro* phototoxicity studies	Selected Double Fudge Concentrate http://ntp.niehs.nih.gov/go/ts-M070049 Rosewood True Color Concentrate M070047 http://ntp.niehs.nih.gov/go/ts-M070047 Double Dark Fudge True Color Concentrate M070048 http://ntp.niehs.nih.gov/go/ts-M070048 Autumn Sunset True Color Concentrate M070050 http://ntp.niehs.nih.gov/go/TS-M070050

Chemical Name & CAS Number	Nomination Source & Year	Rationale for Request & • Recommended Action	Current NTP Status
Phenanthraquinone (9,10-Phenanthrenequinone) 130-15-4	Private individual 2005	Has been shown to have high potency for generating reactive oxygen species and recent reports also indicate other toxicologic pathways Is found in the ambient environment and appears to be formed via atmospheric chemistry It would be useful to test the two naphthoquinones as well, 1,2-naphthoquinone and 1,4-naphthoquinone Given the electrophilic activity and the potential for ROS, the quinones are worth further evaluation	In review/pending 1,2-Naphthoquinone (524-42-5) 1,4-Naphthoquinone (130-15-4) 9,10-Phenanthrenequinone (84-11-7)
9,10-Phenanthrenequinone 84-11-7	Private individual 2005		In review/pending — see Phenanthraquinone (9,10-Phenanthrenequinone) and Polycyclic aromatic hydrocarbon quinones
Phenol, isopropylated, phosphate 68937-41-7	CPSC 2005		Selected — see Flame retardants http://ntp.niehs.nih.gov/go/ts-M060012
Phenoxyethyl acrylate 48145-04-6	NCI 2006	High production volume Potential worker and consumer exposures Lack of adequate toxicological data	Deferred
Phosphonic acid, [3-[(hydroxymethyl)amino]-3-oxopropyl]-, dimethyl ester 20120-33-6	CPSC 2005		Selected — see Flame retardants http://ntp.niehs.nih.gov/go/ts-M060010
o-Phthalaldehyde 643-79-8	NIOSH 2006	*o*-Phthalaldehyde (OPA) is marketed, sold and used as a "safe" replacement for glutaralaldehyde for sterilization of heat sensitive dental and medical devices Toxicity has not been characterized, and some studies suggest that OPA may pose occupational hazards, similar to those of glutaralaldehyde Data are needed to define and document the potential hazard to health-care workers handling OPA, so that appropriate guidelines and protections can be put into place • Toxicological characterization including studies to assess dermal irritation, dermal toxicity, and sensitization and asthmagenic potential	Selected http://ntp.niehs.nih.gov/go/ts-M070036
Polycyclic aromatic hydrocarbon quinones	NIEHS 2008	Nomination of phenanthraquinone by private individual in 2005 expanded to include additional compounds in this class Released into the environment from incomplete combustion of organic materials including wood and fossil fuels High potency for generating reactive oxygen species Possible role in inflammatory diseases • Initial toxicological characterization	In review/pending Acenaphthenequinone (82-86-0) 7,12-Benzanthraquinone (2498-66-0) 5,12-Naphthacenequinone (1090-13-7) 1,2-Naphthoquinone (524-42-5) 1,4-Naphthoquinone (130-15-4) 9,10-Phenanthrenequinone (84-11-7)
2-Propenamide, *N*-[3-(dimethylamino)propyl]-2-methyl- 5205-93-6	NCI 2006	High production volume Potential worker and consumer exposures Lack of adequate toxicological data Demonstrated toxicity in short-term studies • Subchronic toxicity, metabolism and disposition and genotoxicity	Selected http://ntp.niehs.nih.gov/go/ts-M060003
Rebaudioside A 58543-16-1	Private individual 2009		In review/pending — see Stevia and components
Rebaudioside C 63550-99-2	Private individual 2009		In review/pending — see Stevia and components
Ricin 9009-86-3	Private individual 2005	Concern over potential exposure to ricin	In review/pending
Rosewood True Color Concentrate	FDA 2005		Selected — see Permanent makeup inks http://ntp.niehs.nih.gov/go/ts-M070047
Saw palmetto extract 84604-15-9	Private individual 2004		In review/pending — see Creatine, Bitter orange and Saw palmetto
Silica, crystalline–quartz 14808-60-7	Private individual 2006		Selected — see Silica flour: fine and ultrafine crystalline silica particulate http://ntp.niehs.nih.gov/go/ts-M920041

Chemical Name & CAS Number	Nomination Source & Year	Rationale for Request & • Recommended Action	Current NTP Status
Silica flour: fine and ultrafine crystalline silica particulate	Private individual 2006	Used in skin care and pharmaceutical products Inhalation exposures associated with autoimmune disease Lack of toxicity data for oral and dermal exposures • Initial toxicological characterization via oral and dermal routes of administration • Immunotoxicity studies	Selected Silica, crystalline — quartz (14808-60-7) http://ntp.niehs.nih.gov/go/TS-M920041
Sodium benzoate and benzoic acid in Foray 48B insecticide	Private individual 2005	The nominator expressed concern regarding health hazards resulting from the aerial spraying of Foray 48B insecticide, which contains sodium benzoate and benzoic acid People who are already allergic or sensitized to these chemicals may, through being exposed via inhalation, develop serious diseases such as leukemia • Inhalation carcinogenicity	No testing Benzoic acid (65-85-0) http://ntp.niehs.nih.gov/go/TS-65850 Sodium benzoate (532-32-1)
Sodium benzoate 532-32-1	Private individual 2005		No testing — see Sodium benzoate and benzoic acid in Foray 48B insecticide
Sodium naphthenate 61790-13-4	NIEHS 2005	High production volume chemical that is considered an environmental pollutant Two-year study data are lacking • Toxicological characterization	In review/pending http://ntp.niehs.nih.gov/go/ts-M90021
Sodium orthovanadate 13721-39-6	NIEHS; EPA 2008		Selected — see Tetravalent and pentavalent vanadium compounds http://ntp.niehs.nih.gov/go/ts-08006
Sodium metavanadate 13718-26-8	NIEHS; EPA 2008		Selected — see Tetravalent and pentavalent vanadium compounds http://ntp.niehs.nih.gov/go/ts-M940043
Stevia and components	Private individual 2009	Sugar alternative Concern for any possible adverse effects on fetus	In review/pending Dulcoside A (64432-06-0) Rebaudioside A (58543-16-1) Rebaudioside C (63550-99-2) Stevia (2332-31-5) *Stevia rebaudiana* extract or powder (91722-21-3) Steviol (471-80-7) Stevioside (57817-89-7)
Stevia 92332-31-5	Private individual 2009		In review/pending — see Stevia and components
Stevia *(S. rebaudiana)* extract or powder 91722-21-3	Private individual 2009		In review/pending — see Stevia and components
Steviol 471-80-7	Private individual 2009		In review/pending — see Stevia and components
Stevioside 57817-89-7	Private individual 2009		In review/pending — see Stevia and components
Testosterone	Private individual 2004	The rapidly growing use of testosterone therapy has outpaced the meager scientific evidence about its benefits and risks Testosterone therapy has been approved by the FDA only for treating a narrow group of clinical conditions marked by very low testosterone levels, yet doctors have been prescribing it much more widely Last year more than 800,000 patients, mostly middle-aged men, were treated with testosterone; more studies are needed to determine the risks, such as prostate cancer and cardiovascular disease, associated with its use	In review/pending Testosterone (58-22-0) Testosterone propionate (57-85-2) Testosterone oenanthate (315-37-7)
Testosterone 58-22-0	Private individual 2004		In review/pending — see Testosterone
Testosterone propionate 57-85-2	Private individual 2004		In review/pending — see Testosterone
Testosterone oenanthate 315-37-7	Private individual 2004		In review/pending — see Testosterone

Chemical Name & CAS Number	Nomination Source & Year	Rationale for Request & • Recommended Action	Current NTP Status
Tetravalent and pentavalent vanadium compounds	NIEHS; EPA 2008	Widespread occurrence as drinking water contaminant and use as a dietary supplement EPA Drinking Water Contaminant Candidate List research need Pentavalent form carcinogenic via inhalation route Inadequate data to assess risk of oral exposures • Comprehensive toxicological characterization • Chronic toxicity and carcinogenicity studies via oral route • Multi-generation reproductive toxicity studies	Selected Ammonium metavanadate (7803-55-6) http://ntp.niehs.nih.gov/go/TS-08005 Sodium orthovanadate (13721-39-6) http://ntp.niehs.nih.gov/go/TS-08006 Sodium metavanadate (13718-26-8) http://ntp.niehs.nih.gov/go/TS-M940043 Vanadium pentoxide (1314-62-1) http://ntp.niehs.nih.gov/go/TS-10306-Y Vanadyl sulfate (27774-13-6) http://ntp.niehs.nih.gov/go/TS-08004
2,3,4,6-Tetrabromophenol 14400-94-3	NIEHS 2004		In review/pending — see Brominated phenols
1,1,1-Trichloroethane 71-55-6	Private individual 2004	Widely used in industry Extensive exposure to humans Incomplete knowledge of its carcinogenicity Structural similarity to known carcinogens • Carcinogenicity	In review/pending http://ntp.niehs.nih.gov/go/ts-10390-W
1,1,1-Trichloropropanone 918-00-3	Private individual 2009		In review/pending — see DBPs — New and Emerging Chemical Classes
Triclosan 3380-34-5	FDA 2008	Widespread use in consumer products Frequent and long-term exposure for all age groups Lack of adequate toxicity data for dermal exposures • Carcinogenicity studies via dermal administration • Phototoxicity studies	In review/pending
Tricresyl phosphate 1330-78-5	CPSC 2005		Selected — see Flame retardants http://ntp.niehs.nih.gov/go/ts-10277-D
4,7,10-Trioxatridecane-1,13-diamine (TTD) 4246-51-9	NCI 2006	Very little information available on toxicity; information suggests that it is severely acutely toxic TSCA 8(e) submission describes TTD as corrosive to rabbit skin and as MSDS cautions that inhalation may result in spasm, inflammation and edema of the larynx and bronchi, pneumonitis and pulmonary edema • Limited testing, genotoxicity • ICCVAM recommended *in vitro* toxicity studies • Genotoxicity studies	Selected The proposed NTP program would include TTD in the NTP high throughput screening initiative and *in vitro* genotoxicity studies Sufficient information was available on several endpoints that could be evaluated in alternative test systems for acute toxicity, corrosivity, and ocular toxicity No *in vivo* studies were proposed because its irritancy and corrosivity would likely preclude conducting humane *in vivo* toxicity studies by a relevant route of exposure at sufficiently challenging doses, although studies might be feasible at lower exposure levels http://ntp.niehs.nih.gov/go/ts-M060064
Triphenyl phosphate 115-86-6	CPSC 2005		Selected — see Flame retardants http://ntp.niehs.nih.gov/go/ts-11042-J
Tris(hydroxymethyl)phosphine oxide 1067-12-5	CPSC 2005		Selected — see Flame retardants http://ntp.niehs.nih.gov/go/ts-M060011
Tris(4-chlorophenyl)methane (27575-78-6) and Tris(4-chlorophenyl)methanol (3010-80-8)	NIEHS 2008	Widespread occurrence and persistence in the environment Suspicion of toxicity based on anti-androgenic activity Lack of adequate toxicity data • Initial toxicological characterization	Selected Tris(4-chlorophenyl)methane (27575-78-6) Tris(4-chlorophenyl)methanol (3010-80-8)
Tris(chloropropyl) phosphate, mixture 13674-84-5	CPSC 2005		Selected — see Flame retardants http://ntp.niehs.nih.gov/go/TS-M20263
Usnic acid and *Usnea barbata* herb	FDA 2005	Widely used in dietary supplement and personal care products Lack of adequate toxicological data Numerous human adverse event reports • Toxicological characterization • Genetic toxicity • Developmental toxicity • Reproductive toxicity • Pharmacokinetic studies	Selected Usnic acid [(+–)-usnic acid] (125-46-2) http://ntp.niehs.nih.gov/go/TS-M050042 (+)-Usnic Acid (7562-61-0) http://ntp.niehs.nih.gov/go/TS-09009 Usnea lichen http://ntp.niehs.nih.gov/go/TS-09063
Usnic acid [(+–)-usnic acid] 125-46-2	FDA 2005		Selected — see Usnic acid and *Usnea barbata* herb http://ntp.niehs.nih.gov/go/ts-M050042

Chemical Name & CAS Number	Nomination Source & Year	Rationale for Request & • Recommended Action	Current NTP Status
Valdecoxib 181695-72-7	Private individual 2005		In review/pending — see Celebrex and Bextra
Valerian *(Valeriana oficinalis)* root extracts and oil	NIEHS 2009	Use as a dietary supplement Lack of toxicological data Concern for adverse developmental and reproductive effects • Comprehensive toxicological characterization	Selected Valerian *(Valeriana oficinalis)* root extract (8057-49-6) Valerian *(Valeriana oficinalis)* root oil (8008-88-6) http://ntp.niehs.nih.gov/go/TS-M040029
Valerian *(Valeriana oficinalis)* root extract 8057-49-6	NIEHS 2009		Selected — see Valerian *(Valeriana oficinalis)* root extracts and oil
Valerian *(Valeriana oficinalis)* root oil 8008-88-6	NIEHS 2009		Selected — see Valerian *(Valeriana oficinalis)* root extracts and oil http://ntp.niehs.nih.gov/go/ts-M040029
Vanadium pentoxide 1314-62-1	NIEHS; EPA 2008		Selected — see Tetravalent and pentavalent vanadium compounds http://ntp.niehs.nih.gov/go/ts-10306-Y
Vanadyl sulfate 27774-13-6	NIEHS; EPA 2008		Selected — see Tetravalent and pentavalent vanadium compounds http://ntp.niehs.nih.gov/go/ts-08004
Water disinfection by-products (sodium bromate) 7789-38-0	Private individual 2009	Known occurrence in finished (ozonated) drinking water Renal carcinogen in male rats Insufficient data on carcinogenic dose-response, toxicokinetics and mode of action across species, strain, and sex • Carcinogenicity studies	In review/pending http://ntp.niehs.nih.gov/go/ts-M050035
3,5-Xylidine 108-69-0	NIEHS 2008		Selected — see Alkylanilines (2-Ethylaniline [578-54-1], 3-Ethylaniline [587-02-0], 3,5-Dimethylaniline [108-69-0]) http://ntp.niehs.nih.gov/go/ts-11430-P
Zinc 7440-66-6	ATSDR 2004	Carcinogenicity testing via oral exposure is "Priority Data Need" identified by the ATSDR	Selected — Zinc carbonate is the form of zinc to be tested Zinc carbonate, basic (5263-02-5) http://ntp.niehs.nih.gov/go/ts-M070002
Zinc carbonate, basic 5263-02-5	ATSDR 2004		Selected — see Zinc http://ntp.niehs.nih.gov/go/ts-M070002